6. HOW DO I SAFELY MANAGE HAZARDOUS PRODUCTS USED AT MY COOPERATIVE?

You may be handling and storing a variety of **products (i.e., a substance that has not been used, and is not a waste)** such as oils, paints, paint thinners/solvents, antifreeze, pesticides, and/or fuels that you use in your daily operations. Many of these products are defined in EPA regulations as "hazardous substances" (see box). There are regulations for storage of some types of hazardous products, and for reporting your use of them (including storage for future use). There also are standard practices for storage and handling to prevent exposure of individuals to them, to prevent releases to the environment, and to prevent them from mixing together (which could cause explosions, fire, or chemical reactions that release other toxic or hazardous substances).

DEFINITION

Hazardous substances are defined in the CERCLA/EPCRA regulations (at 40 CFR 302.4). The regulations include a list of all defined hazardous substances. Included in the CERCLA/EPCRA definition of hazardous substances are RCRA listed or hazardous wastes, as well as PCBs and PCB wastes. PCBs and PCB wastes and how to manage them are discussed in Chapter 2; RCRA hazardous waste types and discussion of the regulations for managing them are included in Chapter 3.

This chapter will provide you with information on the reporting and storage requirements in the regulations if you use any products defined as hazardous substances at your cooperative, and best management practices for storage and handling of these products.

DO THE REGULATIONS APPLY TO ME?

The material safety data sheets for the products you use, will indicate if the product is a hazardous substance. Also, you can look the product up in the list in 40 CFR 302.4.

6.1 WHAT ARE THE REGULATIONS FOR STORAGE AND REPORTING USE OF HAZARDOUS PRODUCTS?

The Emergency Planning and Community Right to Know Act (EPCRA) addresses protection of the community through establishment of emergency response agencies such as the Local Emergency Planning Committee (LEPC) and the State Emergency Response Commission (SERC). These emergency response agencies coordinate spill response in the event of an accident or emergency. To provide these agencies with information necessary to carry out their function, Sections 311-312 of

EPCRA require information on chemicals stored at your cooperative to be submitted to LEPCs, SERCs, and the fire department. These requirements are discussed in Section 6.2.

The Occupational Safety and Health Act (OSHA) requires a Material Safety Data Sheet (MSDS) to be prepared for each hazardous chemical stored at a facility. MSDS should accompany every product you purchase, or should be available from the manufacturer. OSHA also has regulations on labeling containers of hazardous substances, and on storing flammable and combustible materials. These requirements are discussed in Section 6.3.

6.2 EPCRA REPORTING REQUIREMENTS

There are a number or requirements in EPCRA for reporting your use of hazardous substances at your cooperative, and these requirements vary depending on the types of products used. The following sections describe the various reporting requirements.

6.2.1 MSDS Reporting Requirements

EPCRA Section 311 requires facilities to submit MSDS sheets or a list of MSDS sheets and associated information for the hazardous chemicals you use to the LEPC, the SERC, and the fire department. A list of hazardous chemicals as defined in EPCRA can be found at 40 CFR 372.65.

USEFUL TIP

Contact your LEPC, SERC, or fire department for information on where to obtain the appropriate MSDS notification forms.

6.2.2 Tier I and Tier II Reports

Section 312 of EPCRA outlines requirements for Hazardous Chemical Inventories. Under Section 312, you must provide chemical inventory data to the LEPC, the SERC, and the fire department for any chemical for which you have an MSDS sheet **and**:

- Is a hazardous substance present in excess of 10,000 lb; or
- Is an extremely hazardous substance present in excess of 500 lb. or the Threshold Planning Quantity.

How to identify hazardous and extremely hazardous substances.

EPCRA defines hazardous and extremely hazardous substances. The lists of these substances can be found at 40 CFR Parts 302.4 and 355, respectively. These tables provide reportable quantities or threshold planning quantities for each listed substance.

Hazardous Chemical Inventory Reporting

The Hazardous Chemical Inventory consists of Tier I information and/or Tier II information. If your cooperative meets either of the criteria above, the minimum reporting requirement is to submit a Tier I form to the LEPC, the SERC, and the local fire department. The Tier I form provides aggregate information on hazardous chemicals and includes estimates of the maximum and average daily amounts present, and the location of the chemicals.

USEFUL TIP

Forms for submitting Tier I and II information should be obtained from the SERC. Your local fire department may be able to help you obtain them.

Upon the request of the LEPC, SERC, and local fire department, your cooperative may have to submit Tier II information. Tier II information is similar to Tier I, except that it must be chemical-specific, rather than aggregate information. A facility may voluntarily submit Tier II data instead of Tier I (especially if you believe you will have to submit Tier II data anyway). Tier I data must be submitted by March 1 annually (for the preceding calendar year).

6.2.3 Toxics Release Inventory

TRI Reporting

Section 313 of EPCRA has requirements for certain facilities to provide information on the amount of toxic chemicals released (to air, water, sewer, landfill, etc.). This information goes into the Toxics Release Inventory (TRI) TRI reporting is required for any facility that:

- Has 10 or more full-time employees;
- Falls under SIC Codes 20 through 39, and power generation facilities with SIC Codes 4911, 4931, and 4939 (see below); **and**
- That manufactures, processes, or otherwise uses a toxic chemical as identified in the EPCRA Title III list of lists, in quantities exceeding the specified quantities.

Recent TRI expansion, and impact on Rural Electric Cooperatives

Initially, TRI reporting was only required for facilities that fell under SIC Codes 20 through 39. In May 1997, the list of facility types that must report was expanded, and this expansion included coal and oil-fired utilities and any gas-fired units that burn oil at any given time (i.e., SIC Codes 4911, 4931, and 4939). Since the expansion, rural electric cooperatives that are generation and transmission facilities, as well as those that use diesel generators from time to time to generate electricity for their customers, all may fall within the requirements. See Section 6.3 for information on guidance to help you determine if you must report to the TRI, based on your facility's power generation activities.

EPA has developed a form for TRI reporting, referred to as "Form R" and it can be obtained from EPA and state officials administering the EPCRA program. This form is to be submitted by July 1, 1999 and every year thereafter. The list of chemicals subject to EPCRA Section 313 requirements is found in the Title III List of Lists (found at 40 CFR 372.65).

6.3 HOW SHOULD DIFFERENT HAZARDOUS PRODUCTS BE SAFELY MANAGED?

The goals of safe management of hazardous products are to keep the risk of exposure to those substances small, prevent their release to the environment, and keep them from mixing. Achieving these goals requires following proper use and storage procedures. The key to properly using and storing hazardous products is knowing their hazardous properties.

USEFUL TIP – MINIMIZING EXPOSURE

Exposure of personnel to a hazardous product could cause a serious illness. In addition to the proper use and handling practices discussed in this section, minimizing this risk requires knowing the protective equipment to use when using the substances, and knowing the exposure limits (provided in the OSHA regulations at 29 CFR 1910.100 Subpart Z). Protective equipment and exposure limits will not be discussed further in this document

6.3.1 Hazardous Properties

The two main categories of hazardous products are **physical** and **biological**.

Hazardous properties of the various products you use at your cooperative can be divided into two categories: physical and biological. Substances that pose physical hazards include ignitability, corrosivity, and reactivity. These types of subsances can cause heat or explosions or can otherwise destroy materials. Substances that pose biological hazards are toxic, noxious, or irritants. These types of substances can cause short- or long-term illness or death but do not cause physical damage. MSDSs for the

substances your cooperative uses should indicate the type of hazard the substance poses.

Both physical and biological hazards must be considered in deciding how and where the substances are to be used or stored. Sometimes one material or group of materials has several hazardous properties. And sometimes, even though two products have the same hazardous property, they cannot be used or stored together. Finally, there are four types of hazardous substances that will always produce a reaction if mixed with one another: flammable, corrosive, toxic, and reactive. To make the right safe management decisions, it is important to know something about the "hierarchy of hazards."

Hierarchy of Storage Hazards

The first rule of the hierarchy of hazards is that the physical hazard is usually more important than the biological hazard (see box). Therefore, materials with the same physical hazards should be managed separately from materials with different physical hazards.

HIERARCHY OF HAZARDS

Hierarchy of hazards for storage of hazardous products: 1. physical hazard, 2. severe biological hazard, 3. lesser biological hazard.

After the materials are safe from their physical hazards, thought should be given to the biological hazards each material poses, especially toxicity. Toxicity is a severe biological hazard and toxic materials must be kept separately from all other materials.

Noxious and irritants are less severe.

Less severe biological hazards are noxious and irritant materials. When properly stored in closed containers, they are not a serious threat to workers or the environment. And, if they are released in a fire or a spill, emergency response personnel can usually protect themselves from exposure. Therefore, noxious and irritant materials can be stored with other types of materials. For instance, noxious materials can be stored together with toxic materials. Irritant materials, if they are biological irritants, can also be stored with toxic materials. If they are mild acids or bases, irritant materials can be stored with similar corrosives. However, if a material is corrosive and noxious, it should be stored as a corrosive (because the physical hazard is higher in the hierarchy than the biological hazard).

Store different types of materials separately.

Two types of materials, toxics and reactives, should always be kept away from other types of materials. They should be kept in locked storage areas so that only authorized personnel have access to them. If a material is both reactive and corrosive it should be stored as a reactive material. If a material is toxic and ignitable, it should be stored as an ignitable material but separately from materials that are only ignitable. For example, materials that are both toxic and ignitable could be stored in a locked, fire-safe locker in an ignitable materials storage area.

That means storing them in three ways: first, so that those substances that pose physical hazards do not cause damage to containers and allow the products in those containers to leak out; second, so that, if the substances do leak, they do not mix with other substances to cause fire, explosion or toxic chemical releases; and third, so that if the substances leak, the combination of substances in the storage area does not make it even more difficult for emergency response personnel to respond to a fire or spill.

6.3.2 Avoiding Hazards in Use and Storage

Use and storage in openable containers

Most of the hazardous products you use regularly (such as solvents, fuels, acids), will be contained either in equipment or in containers (bottles, cans, etc.) near where they are used. In locating areas where hazardous products stored in **openable** equipment or containers are to be used, you need to consider both the physical and biological hazards of those substances. To reduce the risk to your health and safety, it is important to keep openable containers or equipment closed when not using or working with any substance. In both use and storage, when hazardous products are in **closed or sealed** equipment or containers, the physical hazards become more important than the biological hazards. Because the containers/equipment are expected to be closed and in good condition, the risk of exposure to the biological hazards of the material is expected to be very small.

Use and storage in sealed containers

Characteristics of Safe Storage Areas

Use barriers to separate.

Hazardous product storage areas can be located indoors, outdoors, or in both places. For either indoor or outdoor storage areas, the best way to separate materials that have different types of physical hazards is to put a physical barrier, such as a wall, between them. OSHA requires that flammable products be stored separately from all other products, in fire-safe lockers or rooms (29 CFR 1910.106). If the amounts of product you store are small, you might store each different hazardous product in a separate fire-safe locker. If separate rooms or lockers are not available

for storing products that have hazardous properties other than flammability, it is advisable to have different storage areas for each type of product, separated by at least 2 meters or approximately 6 feet of open space. These separate areas should have barriers on the floor of the storage area, such as a row of sandbags or a concrete curb, to prevent spills or leaks of incompatible chemicals from mixing. A roof or cover for an outdoor storage area should be provided to protect the containers from the weather.

Secondary containment

Both outdoor and indoor storage facilities should be equipped with secondary containment, which is any device or structure that prevents a spill or leak from reaching the environment. One of the most effective secondary containment methods that can be used in an outdoor storage area is a concrete or asphalt pad surrounded by a berm or curb. The pad and berm prevent any spilled or leaked material from coming in contact with the soil. If a berm is not available, sandbags or absorbent socks around the perimeter of the area will provide some containment for a short period of time after a spill. Within buildings, depending on construction of the building, the walls and floor, provide secondary containment for preventing environmental releases.

One of the least expensive secondary containment devices consists of a metal tray covered by a metal grate, which can be used for 55-gallon drums and smaller containers. The container sits on top of the metal grate so that any material or waste that is released from the container simply falls through the grate and is collected by the metal tray underneath. The tray must be large enough to hold the entire volume of the container and should be protected from rainfall.

Location of outside storage.

For outdoor storage areas, location also is a very important consideration. Storage areas should be located on pavement, not on the bare ground and not on gravel-covered parking areas. Even on pavement, however, some areas are more environmentally sensitive than others. For instance, a storage area should not be located adjacent to a stream, creek, river, or any drainage to them because if a spill or leak were to occur, the hazardous product could get into the surface water and cause damage to wildlife, domestic animals, or humans. Storage areas should not be located next to sandy soil or gravel areas because liquids move more quickly through these types of surfaces and spread contamination more rapidly to the environment.

Similarly, storage in high-traffic areas should be avoided. The fewer vehicles or unauthorized individuals that come in contact with the hazardous products, the lower the risk of a spill or release occurring. It is

also important that fire fighting equipment (i.e., fire extinguisher) can be easily accessed from the storage location.

Handling Leaking Containers of Hazardous Products

When handling a leaking container, the objectives are to prevent human exposure to the material or waste and to keep it from reaching the soils, drains, sewers, or surface water. The first step is to stop the leak if it is possible to do so safely. If the leak occurred because the lid or top of the container was not secure, the lid should be tightened. If the leak occurred because the container broke or rusted-through, the material in the leaking container can be transferred to a new container. A leaking container can be "overpacked" by placing it within a larger container, so that any leaking material is contained within the outer container.

6.2.3 What Are OSHA Labeling Requirements?

Labeling is very important for the following simple reasons.

- Even though hazardous products that enter the workplace are already labeled, there are all kinds of opportunities for them to be placed in a container that is unlabeled. Labels are often misplaced as well, leaving the past contents of a container to be a mystery.

- Since hazardous products are stored where many individuals are working, one person might know what is in the container, but other individuals, such as fire fighters responding to a spill, need to know the contents of the container as well so that they can wear appropriate personal protective equipment and use the most effective technique to clean up a spill or fight a fire.

Why label?

- Human memory does not work perfectly all the time. It may be easy to remember what is in one drum, but when five or six are added, sometimes they all look the same. Even if you are able to keep track of which container is which, the other workers who use the containers may not.

- To ensure that violent reactions do not occur, certain hazardous products must be stored away from others. If drums are not labeled, it is very easy for incompatible chemicals to get mixed.

For all of the above reasons, OSHA regulations require that before any material is stored, it must first be labeled. These regulations, found at 29 CFR 1910.1200 are known as the Hazard Communication Requirements. The regulations contain two types of labeling requirements: labeling individual containers and labeling storage areas.

USEFUL TIP

Regulations other than OSHA (including the Toxic Substances Control Act [TSCA] [See Chapter 2] and the Resource Conservation and Recovery Act [RCRA] [See Chapter 3]) also contain detailed requirements for labeling various types of hazardous product.

How to Label Containers

A label on a container must include the item name and hazardous properties associated with the contained material, such as “ignitable” or “toxic.” When a product is labeled by the manufacturer, it contains the following information:

Manufacturers label information.

- The common name of the material
- The names of all hazardous chemicals contained in the product
- A list of all hazardous properties
- Symbols for the hazardous properties
- Coded information on specific risks and safety precautions
- The name and address of the manufacturer.

When hazardous products are stored in containers other than the ones they came in, for instance, when you have put paint into a temporary container to mix or thin it, the new container must also be labeled. But not all the information printed by the manufacturer must be placed on this temporary container. The label for the new container must include the following:

What to put on your labels for your products.

- The name of the material
- A list of all hazardous properties
- The symbol for the hazardous property.

For example, a temporary container of ignitable paint would have the following information:

PAINT
IGNITABLE
The flame symbol

Labeling methods

Labeling of individual containers, ranging from a pint-size can to 55-gallon drum to storage tanks holding thousands of gallons, can be accomplished in a variety of ways. A stencil and spray paint can be used to physically paint the label on the side of the container. A permanent magic marker can be used to write on the side of the container, or a plastic coated paper label can be stuck to the container. When selecting a labeling method, consider whether the container will be stored indoors, where it is protected from the weather, or whether it will be stored outdoors. If the container is stored outdoors, select a labeling method that can withstand the effects of rain, snow, and sun. Containers that are stored outside should be checked periodically to ensure that the label is in place and legible.

Labeling Empty Containers to Be Reused

Be sure to relabel reused containers.

If an empty container is to be reused to store hazardous product, it must first be re-labeled to reflect its new contents. Before any re-labeling is done, it must be empty, dry, and in good condition. Your state environmental office should be contacted for instructions on whether and how to reuse containers.

Destroy old label before reusing container.

If a container is to be reused, the old label must be removed or obliterated. This can be done by painting over a painted or inked label or by physically removing the plastic coated paper label before re-labeling the container. To re-label containers, stencils and spray paint can be used to physically paint the label or a permanent marker can be used to write on the container.

How to Label Storage Areas

Hazardous products storage areas also must have signs. Personnel not familiar with the work site should be aware of the presence of hazardous products at the storage area. Each separate storage area must have a sign indicating what type of materials are stored in it These signs must be large enough to be read from 7.5 meters or 25 feet away. To prevent co-storage of incompatible materials, the storage areas must clearly indicate what goes where.

6.4 RESOURCES

6.4.1 References

The following documents can help determine whether your facility must report to the TRI database.

EPA 1997. *Addendum to the Guidance Document for Newly Added Industries*. (Contains industry-specific guidance on TRI expansion).

EPA 1997. EPCRA 311 Q&A Document: *Helping to Define Who and What TRI Expansion Applies To*. Available on the internet at www.EPA.gov\opptintr\TRI\addfinl.PDF.

6.4.2 Hotlines

OSHA Hotline to answer questions about worker safety standards: (301) 515-6796

RCRA/CERCLA/EPCRA Hotline: (800) 424-9346